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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,850

04/05/2004

William W. Keller

119544-00101

3133

27557

7590

04/14/2008

BLANK ROME LLP

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WASHINGTON, DC 20037

EXAMINER

SAYALA, CHHAYA D

ART UNIT

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1794

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DELIVERY MODE

04/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/816,850	<b>Applicant(s)</b> KELLER ET AL.	
	<b>Examiner</b> C. SAYALA	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 1/10/2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Reopening of Prosecution After Appeal***

In view of the appeal brief filed on 1/10/2008, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

**/Milton I. Cano/**

**Supervisory Patent Examiner, Art Unit 1794**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, "grounded" should be changed to - - ground- -.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

### ***Claim Rejections - 35 USC § 102/ Claim Rejections - 35 USC § 103***

1. Claims 1, 3, 5-9, 14, 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 474992.

The patent teaches adding lignosulfonate and calcium carbonate to poultry manure to obtain a fertilizer. The amount of poultry manure is 30-60%, calcium

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lignosulfonate is 1-20% and limestone is 0-40%. The phosphate content in the final product is given as 0-20%. See claims 1, 5 and 7. The limitation of total nitrogen content and phosphorus content would be inherent in the final product, because the amounts of poultry manure, limestone and binder fall within the same range and therefore, the phosphate content and the nitrogen content must be the same in the final product. Alternatively, this rejection is also being made under 35 USC 103 because although the reference does not expressly specify the nitrogen and phosphorus content of the fertilizer, applicant has chosen to describe his product with physical characteristics that are beyond measurement by this Office and as a practical matter, the Patent Office is not equipped to manufacture and obtain prior art products and make physical comparisons therewith. See *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972) at 59 CCPA 1041.

2. Claims 1-2, 8-13 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Connell (US Patent 6461399).

The patentee teaches using poultry manure (col. 4, line 60), treating it with calcium carbonate (col. 4, lines 6 and 8), and grinding and blending the two. Col. 4, lines 38-40. A binder, ligninsulfonate is also used to make a prilled product (col. 6, lines 37-40; col. 7, lines 37-65). Note figures 2 and 3, which show the raw product is fed into a drier to reduce the moisture content (col. 7, lines 41-43). Note the screening step at

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col. 8, line 10+. Dolomitic limestone is said to be the most common form available and used (col. 4, lines 10-20). The limitation of total nitrogen content and phosphorus content would be inherent, because the reactants are the same, which is, poultry manure, limestone and binder, and mixing these together and therefore would result in the same. Although the patent adds acids, which are any of a short list of acids including nitric, carbonic, citric, fulvic, etc. these are not excluded by the claims. Alternatively, this rejection is also being made under 35 USC 103 because although the reference does not expressly specify the nitrogen and phosphorus content of the fertilizer applicant has chosen to describe his product with physical characteristics that are beyond measurement by this Office and as a practical matter, the Patent Office is not equipped to manufacture and obtain prior art products and make physical comparisons therewith. See *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972) at 59 CCPA 1041.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1, 3, 5-9, 14, 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 474992 in view of Mitchell and Christensen (see PTO-form 892).

The patent teaches adding lignosulfonate and calcium carbonate to poultry manure to obtain a fertilizer. The amount of poultry manure is 30-60%, calcium lignosulfonate is 1-20% and limestone is 0-40%. The phosphate content in the final product is given as 0-20%. See claims 1, 5 and 7. The limitation of total nitrogen

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content and phosphorus content is not shown by the reference, however the Mitchell reference (paragraph bridging pages 1 and 2) states:

The chemical analysis of either type of manure is highly variable due to several factors. These include moisture, temperature, amount and kind of litter, amount of soil picked up in cleaning a house, the number of batches of broilers fed on the litter, and the conditions under which the manure was stored and handled before spreading.

Furthermore, the Christensen reference (page 2) states that:

The nutrient content of manure listed in the table should be used as a general guideline when determining rates of application, keeping in mind the wide variability that exists among samples. Also, application rates must take into account mineralization or the rate of release of N as the manure decomposes (see decay series).

Common reasons for the variability of the nitrogen content in manure include type of animal and feed ration, amount of litter, bedding or soil included, and amount of urine concentrated with the manure.

Handling can greatly alter the value of manure, particularly its nitrogen content. Nitrogen is present in manure in a variety of forms, most of which gradually converts to ammonium and nitrate nitrogen.

Based on such factors already known and established in prior art, as well as the well known fact known to one of ordinary skill in the art that the nitrogen content of poultry litter is lost by volatilization of ammonia, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to control such factors in order to obtain the desired nutrient content. Furthermore, these references report a varied nutrient content for N and/or P depending on the type of poultry, i.e. hen, turkey, layers, broilers, caged birds, etc. Therefore based on nutrient availability, nutrient

requirement, factors already established that cause variability in nutrient value and methods for nutrient analyses (see the references that detail such), it would have been obvious to estimate the nutrient content of the fertilizer product (see page 4 of Mitchell).

4. Claims 1-2, 8-13 and 19-20 are rejected under 35 U.S.C. 103(a), as being unpatentable over Connell (US Patent 6461399) in view of Mitchell and Christensen.

The patentee teaches using poultry manure (col. 4, line 60), treating it with calcium carbonate (col. 4, lines 6 and 8), and grinding and blending the two. Col. 4, lines 38-40. A binder, lignin sulfonate is also used to make a prilled product (col. 6, lines 37-40; col. 7, lines 37-65). Note figures 2 and 3, which show the raw product is fed into a drier to reduce the moisture content (col. 7, lines 41-43). Note the screening step at col. 8, line 10+. Dolomitic limestone is said to be the most common form available and used (col. 4, lines 10-20). The limitation of total nitrogen content and phosphorus content is not shown by the reference, however the Mitchell reference (paragraph bridging pages 1 and 2) states:

The chemical analysis of either type of manure is highly variable due to several factors. These include moisture, temperature, amount and kind of litter, amount of soil picked up in cleaning a house, the number of batches of broilers fed on the litter, and the conditions under which the manure was stored and handled before spreading.

Furthermore, the Christensen reference (page 2) states that:

The nutrient content of manure listed in the table should be used as a general guideline when determining rates of application, keeping in mind the wide variability that exists among samples. Also, application rates must take into account



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mineralization or the rate of release of N at; the manure decomposes (see decay series).

Common reasons for the variability of the :nitrogen content in manure include type of animal and feed ration, amount of litter, bedding or soil included, and amount of urine concentrated with the manure.

Handling can greatly alter the value of manure, particularly its nitrogen content. Nitrogen is present in manure in a variety of forms, most of which gradually converts to ammonium and nitrate nitrogen.

Based on such factors already known and established in prior art, as well as the well known fact known to one of ordinary skill in the art that the nitrogen content of poultry litter is lost by volatilization of ammonia, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to control such factors in order to obtain the desired nutrient content. Furthermore, these references report a varied nutrient content for N and/or P depending on the type of poultry, i.e. hen, turkey, layers, broilers, caged birds, etc. Therefore based on nutrient availability, nutrient requirement, factors already established that cause variability in nutrient value and methods for nutrient analyses (see the references that detail such), it would have been obvious to estimate the nutrient content of the fertilizer product (see page 4 of Mitchell).

5. Claims 1-3, 8-14, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 57111292 in view of Cook (US Patent 2597457), Wesley (US Patent 462476) and Tetrault et al. (US Patent 5885461), taken with Kazemzadeh (US

Patent 5772721) and WO 01/42731, Rosenfeld (US Patent 4704989) and CA 2310955 and further in view of Mitchell and Christensen.

The JP '272 patent teaches a method of producing organic fertilizer from poultry manure by adding calcium carbonate under stirring. Page 5 of the translated patent states at line 3, that addition of pulverized calcium carbonate provides acid neutralization and provides a "calcific fertilizer".

The patent does not teach the binder, calcium lignosulfonate.

Cook teaches that when Ca carbonate is added to poultry litter, it provides an odor absorptive property and that the calcium carbonate provides a stickiness or affinity for the litter. See col. 2, lines 35-50, col. 3, lines 1-5. Wesley teaches that the addition of limestone to excrement results in preventing fermentative changes, in preserving manurial value and transforming it into a nearly odorless fertilizer. The Tetrault et al. patent teaches at col. 3, lines 10-15 and col. 4, lines 58-60 that addition of calcium carbonate neutralizes the pH and reduces bad odors and prevents the formation of malodorous compounds. Such patents establish that it was well known to add calcium carbonate to reduce bad odors emanating from poultry litter/feces, among other benefits.

The '721 patent teaches that providing an organic fertilizer that comprises dried poultry waste, uses calcium carbonate to reduce odor, and binders such as lignosulfonate (col. 3, lines 5-10, col. 3, line 57), benefits by being pelletized, since pellets provide stability and ease in handling. See col. 2, lines 25-29.

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In this regard, the WO 01/42731 teaches the following, suggesting the advantageous combination of limestone and calcium lignosulfonate; see page 4, lines 17+:

The lignosulphonate binder reacts with the calcium carbonate to form a binding system. The precise mechanism is not understood, but a good approximation can be deduced by reference to known lignin properties and their effect on various substrates. Lignosulphonates have a strong affinity for certain mineral substrates like limestone and attach themselves by hydrogen bonding to the particle surfaces. An aqueous limestone slurry dispersed with a polyelectrolyte like calcium lignosulphonate does not flocculate due to two complementary mechanisms:

(i) Electrostatic repulsive forces generated by the presence of an electrical double layer at the particle/solution interface.

(ii) Steric repulsion, arising from the apparent expansion of the particle due to the absorbed dispersant.

If the water is then removed from such a system (e.g. by spray drying) the lignin remains firmly bonded to the mineral surfaces, in a thin uniform layer. The lignin however is no longer acting as a polyelectrolyte dispersant, and adjacent lignin covered surfaces will have a strong affinity for each other. The observed effect of which is an increase in the minerals packing density.

The CA patent also discloses that combining a mineral component such as limestone or dolomite with a binder such as lignosulfonate (claims 13-15) produces granular substrates that do not degrade during handling but breaks down when exposed to moisture or water (page 3, lines 28-31 and lines 2-3).

Rosenfeld also teach that to stabilize pellets, adhesive-type, lignin-type binders are beneficial in that they reduce breakage to a minimum. See col. 6, lines 45-68.

Note that these references also teach the basic steps of pelletizing: pulverizing, mixing together with binders and pelletizing them with a pelletizing apparatus.

Therefore, these three references show that lignosulfonate as a binder for limestone is advantageous.

Based on the applied disclosure, it would have been obvious, as already shown in prior art, to combine the poultry manure with odor-decreasing calcium carbonate or dolomite, the latter being well known to contain limestone as shown by the CA patent, and to pelletize this combination with calcium lignosulfonate, since calcium lignosulfonate is shown by these references to be the best available binder for limestone and, pelletizing aids stability and ease of handling (Kazemzadeh). Since the limestone is used for its odor-reducing property by prior art for poultry manure, and the calcium lignosulfonate is used for its best binding property, also shown by prior art, then to determine amounts required to pelletize poultry manure would have been within the purview of the skilled worker based on these functional requirements, i.e. they are result effective variables.

The limitation of total nitrogen content and phosphorus content is not shown by the primary reference either, however the Mitchell reference (paragraph bridging pages 1 and 2) states:

The chemical analysis of either type of manure is highly variable due to several factors. These include moisture, temperature, amount and kind of litter, amount of soil picked up in cleaning a house, the number of batches of broilers fed on the litter, and the conditions under which the manure was stored and handled before spreading.

Furthermore, the Christensen reference (page 2) states that:

The nutrient content of manure listed in the table should be used as a general guideline when determining rates of application, keeping in mind the wide variability that exists among samples. Also, application rates must take into account mineralization or the rate of release of N at; the manure decomposes (see decay series).

Common reasons for the variability of the :nitrogen content in manure include type of animal and feed ration, amount of litter, bedding or soil included, and amount of urine concentrated with the manure.

Handling can greatly alter the value of manure, particularly its nitrogen content. Nitrogen is present in manure in a variety of forms, most of which gradually converts to ammonium and nitrate nitrogen.

Based on such factors already known and established in prior art, as well as the well known fact known to one of ordinary skill in the art that the nitrogen content of poultry litter is lost by volatilization of ammonia, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to control such factors in order to obtain the desired nutrient content. Furthermore, these references report a varied nutrient content for N and/or P depending on the type of poultry, i.e. hen, turkey, layers, broilers, caged birds, etc. Therefore based on nutrient availability, nutrient requirement, factors already established that cause variability in nutrient value and methods for nutrient analyses (see the references that detail such), it would have been obvious to estimate the nutrient content of the fertilizer product (see page 4 of Mitchell).

### ***Response to arguments***

Applicant's arguments filed 1/10/07 have been fully considered but they are not persuasive.

The record now includes a recently translated version of the EP patent. Applicant argues that all of the values within the ranges shown by the EP patent are not part of the instant claims, that the EP patent would only anticipate "part of the time" since there is not an exact overlap of the reference amounts with the claimed amounts, that the Examiner has used hindsight and this only relates to applicant's statements on pages 10-13. At pages 15-20, besides the discussion of various case law, applicant has cited the references to Christensen (now made of record on PTO-form 892) and Mitchell (now made of record on PTO-form 892) to show that the nutrient content of the fertilizer would depend on a number of factors such as handling methods, etc. Also, applicant states that the references add various other chemicals and that violates his interpretation of the claim.

In response, the claim requires 3 elements and then recites the content of nutrients, N and P. The reference shows these three elements, poultry manure, limestone or dolomite and lignin sulfonate, in amounts that clearly include those claimed. Therefore, inherently, it must be that the N and P contents would be the same. Alternatively, given the references cited, that is, Christensen and Mitchell, the factors that influence nutrient content appear to be well established in the art; then it is known that such factors can be controlled or manipulated or should be taken into consideration so as to determine the final nutrient content and therefore, this would have been obvious to one of ordinary skill in the art at the time the invention was made. In any

event, the Office is not equipped to manufacture and measure the final nutrient content of every prior art fertilizer or evaluate all the factors that would influence the final nutrient content. Therefore, applicant's position that if the Office cannot evaluate the nutrient content, or if the reference does not state these values, that this be held the basis of patentability of applicant's claimed subject matter, cannot be agreed with. However, note that the submitted references establish that estimation of nutrient content, factors that influence nutrient content and analyses of nutrient content were well within the ambit of the skilled person at the time the invention was made.

As for applicant's contention that the examiner has used hindsight: In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

With regard to the fact that the references include compounds not part of the instant claims and therefore, the references are not applicable, this is also disagreed with because the claim language does not exclude such elements and the argument that this may change the final nutrient content is unconvincing, given the references that applicant has submitted, and do not establish unequivocally that the claims are patentable over prior art and may not have the same N and P values. However, it

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should also be noted that even if these exogenous compounds were present, one skilled in the art was cognizant at the time the invention was made, that estimation of nutrient content, factors that influence nutrient content and analyses of nutrient content were well within the ambit of the skilled person, see references of Mitchell and Christensen.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references cited but not applied show the use of calcium carbonate with poultry manure to be common in prior art, for the same reasons given above; such references were considered cumulative, given those already applied, but establish the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Sayala whose telephone number is (571) 272-1405. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you



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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/C. SAYALA/**

**Primary Examiner, Art Unit 1794**